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**Fumitake**

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(54) **TRANSISTOR HAVING A  
HETEROJUNCTION AND  
MANUFACTURING METHOD THEREOF**

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(58) **Field of Classification Search**

None

See application file for complete search history.

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**ABSTRACT**

A transistor includes a semiconductor substrate comprising a  
first region and a second region. The transistor further  
includes an emitter and a base disposed on the first region,  
and a collector disposed on the second region. The emitter  
includes a heterojunction. The heterojunction is at a same  
height as a junction between two different insulating mate-  
rials that separate the emitter and the base.

**20 Claims, 16 Drawing Sheets**

